# Symptoms of depression and intervening factors among nurses of emergency hospital services

## Sintomas de depressão e fatores intervenientes entre enfermeiros de serviço hospitalar de emergência

Felipe Perucci de Oliveira[1]
Maria Cristina Mazzaia[1]
João Fernando Marcolan[1]

## Abstract

**Objective:** To verify if nurses from the emergency hospital services had depressive symptoms, identifying intervening factors and analyzing perception about the psychic suffering and its influence on care provided.
**Methods:** Cross-sectional study, conducted with nurses of emergency hospital services. The research instrument was a semi-structured questionnaire with sociodemographic variables and psychometric scales for the assessment of depression. For statistics, the Fisher exact test was used.
**Results:** A total of 23 nurses participated, of which 91.3% showed symptoms of depression. Factors for illness were related to work conditions such as overload, devaluation, lack of human and material resources. The nurses neither acknowledged themselves as sick, nor being influenced on care provided. The results were converging for the scales of observation. All nurses were advised and sent to specialized care.
**Conclusion:** The majority of nurses working in emergency services reported depression linked to working conditions. Most of them did not realize their own psychic suffering.

## Resumo

**Objetivo:** Verificar se enfermeiros do serviço hospitalar de emergência apresentavam sintomas depressivos, identificar fatores intervenientes e analisar percepção sobre o sofrimento psíquico e influência na assistência prestada.
**Métodos:** Estudo transversal, realizado com enfermeiros de serviços hospitalares de emergência. O instrumento de pesquisa foi um questionário semiestruturado, com variáveis sociodemográficas e escalas psicométricas para avaliação de depressão. Para estatística foi utilizado o teste exato de *Fisher*.
**Resultados:** Participaram 23 enfermeiros dois quais 91,3% apresentaram sintomas de depressão. Fatores para adoecimento estavam relacionados às condições do trabalho como sobrecarga, desvalorização, falta de recursos humanos e materiais. Os enfermeiros não se percebiam adoecidos, nem influência na assistência. Os resultados foram convergentes para as escalas de observação. Todos foram orientados e encaminhados para atendimento especializado.
**Conclusão:** A maioria dos enfermeiros atuantes nos serviços de emergência apresentou quadro depressivo ligado a condições de trabalho A maioria não percebia o próprio sofrimento psíquico.

**Corresponding author**
Felipe Perucci de Oliveira
Napoleão de Barros street, 754, São Paulo, SP, Brazil. Zip Code: 04024-002
feperucci@gmail.com

[1]Escola Paulista de Enfermagem, Universidade Federal de São Paulo, São Paulo, SP, Brazil.
**Conflict of interest:** the authors declare that there are no conflicts of interest.

## Introduction

Major depression is one of the leading causes of disability or adjusted life years due to some incapacity and invalidity.[1] It is also the main cause of illness and disability among adolescents and, overall, is the leading cause of illness and disability in this age group.[2]

Study indicates that, in 2012, there were 6.9% of individuals in the United States of America population with 18 years or more who had been through some kind of major depression episode in the previous year.[3] On a large scale study conducted in the metropolitan region of Sao Paulo, the index for depression found was 11% of the general population.[4]

Nursing professionals related personal distress to the work environment, mainly due to lack of support and negative work conditions.[5] The professional environment with the characteristics and organization of the nursing work encompasses constant stressful situations.[6]

As the emergency area becomes major promoter of stress and nursing workers who work in these units are exposed to various occupational hazards; their health conditions are compromised and possibly some of the health changes that are present, are a result of their exposure to such risks. It was noted that psychosocial risks were the most prominent.[7]

The working environment in nursing presents important stressors affecting the quality of life of professionals and are predisposing factors to illness, such as heavy workload, insufficient salary, social discrimination, high expectations, high degree of responsibility to the patients and the physical atmosphere.[8]

Working conditions significantly influence workers' health, as these conditions may compromise their mental health and professional performance, due to a stressful and demanding daily routine.[9]

This study aims to verify if nurses from the emergency hospital services had depressive symptoms, identifying intervening factors and analyzing perception about the psychic suffering and its influence on care provided.

## Methods

This is a cross-sectional study conducted in the city of Presidente Prudente, in the state of Sao Paulo, we included two hospitals, a State public hospital and a philanthropic hospital, and four units of emergency care from the city. The period of data collection occurred from January to April of 2013. Twenty three nurses, who fulfilled the inclusion criterion of working for six months in the emergency hospital service, were included.

As research instruments, three psychometric scales were used - the Beck Depression Inventory (BDI), Hamilton Rating Scale for Depression (HAM-D) and Montgomery-Asberg Depression Rating Scale (MADRS) -and a semi-structured questionnaire with open questions to address the psychic sphere, presence of depressive symptoms and related factors; for the items of the questionnaire more than one answer was accepted. Data collection occurred through interview.

A training was provided to the researcher who collected the data for the purposes of rating scales of depressive symptomatology.

Data analysis was based on the scores set for each scale for determining the intensity of depressive symptomatology, in the set of results of scales and analysis in each range of items of greater significance. As for the questionnaire, the responses were categorized according to the frequency of events and statistical treatment, also performed with the scales, using Fisher's exact Test and Pearson correlation coefficient.

The development of the study attended national and international standards of ethics in research involving human subjects.

## Results

A total of 23 nurses participated in this study: 14 from the emergency team of Municipal Health Secretariat, 6 from the Regional Hospital emergency and 3 from the hospital Santa Casa de Misericordia emergency.

Most of the nurses were female (69.6%) had an average age of 35.82 years with a standard deviation of 7.06 years, were married (56.5%),

were nurses (with a degree) for more than five years (73.9%), were working as a nurse and in the emergency department for more than two years(65.2%); 12 of them (52.2%) said they had another job, eight (34.8%) worked for more than 60 hours per week.

Regarding having previous diagnosis for depression, 15 (65.2%) said they did not have and eight (34.8%) said they had it. For those who have responded having previous diagnosis of depression, table 1 shows the intensity of the depression, the time of diagnosis and type of treatment for those who were treated.

**Table 1.** Self-report of nurses on the intensity of depression, time of diagnosis and treatment

| Variables | n(%) |
|---|---|
| Level | |
|     Low depression | 3(37.5) |
|     Moderate depression | 1(12.5) |
|     Did not know how to classify | 4(50.0) |
| Time of diagnosis | |
|     0-1 year | 2(25) |
|     2-5 years | 4(50.0) |
|     6-10 years | 1(12.5) |
|     16 years | 1(12.5) |
| Type of treatment received | |
|     Medicines | 4(50.0) |
|     Psycotherapy | 1(12.5) |
|     Medication and psycotherapy | 2(25) |
|     No adherence to treatment | 1(12.5) |
| Total | 8(100) |

Of the 15 (65.2%) nurses who reported having no previous diagnosis, 6.7% revealed no diagnosis, but carried out the treatment on their own with phytotherapeutic medicine.

In table 2 are presented the results of the scales for depressive symptoms, according to the distribution of participants with and without previous diagnosis.

It was found that 13 (56.52%) nurses who had no previous diagnosis for depression were appointed with depression by psychometric scales applied. The p-value for Fisher's exact test was 0.5257, indicator that the association between prior diagnosis and depression diagnosis obtained by scale was not significant.

When analyzed the results of nurses with previous diagnosis, it was observed that only women have presented this type of diagnosis, being 50% considered with mild depression, 25% with

**Table 2.** Results for depressive symptoms detected by psychometric scales

| With previous diagnosis n(%) 8(34.8) | | Without previous diagnosis n(%) 15(65.2) | |
|---|---|---|---|
| BDI | | BDI | |
| No depression (0-9) | 4(17.4) | No depression (0-15) | 14(60.8) |
| Mild depression (10-16) | 1(4.3) | Dysphoria (15-19) | 1(4.4) |
| Moderate depression (17-29) | 2(8.8) | Depression (20-63) | - |
| Severe depression (30-63) | 1(4.3) | - | - |
| HAM-D | | HAM-D | |
| No depression (7<) | - | No depression (7<) | 1(4.4) |
| Mild depression (7-17) | 4(17.2) | Mild depression (7-17) | 7(30.4) |
| Moderate depression (18-24) | 2(8.8) | Moderate depression (18-24) | 7(30.4) |
| Severe depression (25 >) | 2(8.8) | Severe depression (25>) | - |
| MADRS | | MADRS | |
| No depression (7<) | - | No depression (7<) | 2(8.7) |
| Mild depression (7-19) | 5(21.7) | Mild depression (7-19) | 9(39.1) |
| Moderate depression (20-32) | 1(4.3) | Moderate depression (20-32) | 4(17.4) |
| Severe depression (33-60) | 2(8.8) | Severe depression (33-60) | - |

BDI – Beck Depression Inventory; HAM-D – Hamilton Rating Scale for Depression; MADRS – Montgomery-Åsberg Depression Rating Scale

moderate depression and 25% with severe depression.

Regarding the comparison of the results between the scales, it was found that 10 nurses who were not diagnosed with depression by the BDI were classified having mild depression by the HAM-D. However, five nurses were identified with some degree of depression for both instruments, it indicates that in certain cases the instruments identified depression. By Fisher's exact test can be said that there was no association between the two instruments for classification of depression (p-value = 0.0028).

There was no coincidence in the classification of depression in 17 (73.92%) nurses according to results of the HAM-D and MADRS. Eleven (47.83) nurses were classified with mild depression and four (17.39%) were classified as having moderate depression in both instruments. By Fisher's exact test, the association between these two measurement instruments for classifying depression was significant (p-value <0.0001).

There were 12 (52.17%) nurses who were not diagnosed with depression by the BDI, but diagnosed with mild depression by MADRS. Again, it was observed that five nurses were identified with some degree of depression for both scales. Based on this result, the Fisher exact test indicates that the association between the results obtained by the MADRS and BDI are significant (p-value = 0.0003).

For the performance of the correlational study between the instruments of measurement was calculated Pearson's correlation coefficient. The correlation coefficient between BDI and HAM-D was 0.7325 and statistical test was p<0.0001, indicating significant association. There is significant correlation between the results from HAM-D and MADRS, with Pearson's correlation coefficient of 0.9755 and the p-value calculated for the test was p<0.0001. There is also indication that there is significant correlation between BDI and MADRS with Pearson correlation coefficient of 0.7715 and p<0.0001.

It can be affirmed that the MADRS and HAM-D indexes act together better than the union of any one of those BDI index, since they present the same results, with few differences at intersections of their analyses.

When asked if they had history of depression in their family, 15 participants (65.2%) responded they had a family member with depression or had presented, with degree of relatedness of direct relation (mother, brother, uncle, father, grandparents and children). Of the nurses who had a family history of depression, 6 (40.0%) had previous diagnosis of depression.

Regarding the analysis performance, we considered the existence or not of depression in the family and the presence or absence of prior depression. In seven (30.43%) of nurses who had no family history had no previous diagnosis, but were diagnosed by the scales. In this situation, using Fisher exact test can be said that there is no association between family history and prior depression (p-value= 1.00).

It is observed that in more than half of nurses (52.17%) had patients who had a family history of depression and the nurse was classified by scales as depressed, however, in 39.13% of nurses who did not have family history was also diagnosed with depression. By Fisher's exact test, it is not possible to claim that there is association between family history and depression presented by scale (p-value= 1.00).

Nurses were asked about the factors considered important for their current emotional state or development of their depressive symptomatology and in table 3 are presented the results.

Regarding the perception from those who had psychic suffering reported or detected by the scales, 15 (65.2%) nurses perceived changes and possible results. Regarding suffering reported or detected influenced the assistance provided by these professionals, seven (30.4%) reported that could affect assistance provided, one 4.3%) mentioned never having provided care in this possible interference and 14 (60.9%) said it did not interfere in care provided.

**Table 3.** Factors related to the current emotional state or the development of depressive symptomatology

| Variables | n(%) |
|---|---|
| Factors related to working conditions | |
| Work overload, excessive workload, exhaustion, concern with work | 16(30.2) |
| Unsatisfactory salary | 7(13.2) |
| Professional devaluation, lack of recognition | 6(11.3) |
| Lack of conditions for work | 5(9.4) |
| Unprepared team and team rotation | 4(7.6) |
| Job insecurity | 3(5.7) |
| Professional harassment | 2(3.8) |
| Lack of professional commitment from colleagues | 2(3.8)) |
| Frustration | 2(3.8) |
| Dissatisfied team | 1(1.8) |
| Lack of autonomy for the nurse | 1(12.5) |
| Personal issues | |
| Lack of confidence | 2(3.8) |
| Aging | 2(3.8) |
| Total | 53(100) |

## Discussion

The limitations of the results of the study are related to the cross-sectional design used that does not allow the establishment of cause and effect association. On the other hand, the application of psychometric scales of self-assessment and observation expands the specifics of action and the theoretical instrumental of nursing professionals.

The knowledge brought to light opens the possibility of acting in the area of prevention, health promotion and recovery, it gives support to drastic actions in the change of legislation in the worker's health area and give visibility to the Nursing professionals on actions to be implemented by the struggle for better working conditions and the quality of care.

Report of the World Health Organization from large epidemiological study on major depressive episode in the world found that in the eight countries of low or medium income consid-

ered in the study, 11.1% of the population had had, at least once in life, a major depressive episode and 5.9% in the previous 12 months. The higher prevalence in the last 12 months was registered in Brazil with 10.4% and the lowest was in Japan with 2.2%.[10]

The work can be responsible for becoming a source of pleasure or pain depending on the way it is organized. The lack of cohesion and collaborative participation among nurses were significant predictors to the occurrence of somatic problems. The differences in the organizational environment justify the variation presented in the results regarding the health of hospital nurses.[11]

In our study there was predominance of females, young professionals, but with male quantity (30.4%) higher proportion than the proportion found in the profession in general, these data are in concordance with the reality of other Nations.[12]

Nurses of emergency department, due to the specificity of their work with exposure to traumatic events, in general with the risk of death of patients, are vulnerable to post-traumatic stress disorder, anxiety, depression and somatic complaints.[13]

In our results, nurses pointed out that the team was unprepared to act as generating situation of exhaustion, hence, the lack of training can generate psychic suffering.[14]

The emergency department is complex and requires specific skills of professionals,[15] therefore, the fact of not being qualified for a given area could contribute to the suffering and illness of the individual.

Nursing professionals of emergency services devote most of their time to direct care to critically ill individuals, working in the care of the patient's life support, they are constantly faced with the duality life and death, situations that require skilled professionals and similarly expose them to the sufferings and occupational hazards.

The excess of work implies reduction of meal time, leisure, rest, sleep, social and family contact adding more suffering.[16] The salary dissatisfaction is one of the factors that lead nurses to feel unhappy and unmotivated at work,[17] leading them to own

another employment bond with increase in workload time.

The nurse who undergo the double shifts of work harm themselves and others who depend on their work, as this fact may cause absenteeism between Nursing professionals, higher number of accidents at work, increasing the chances of errors in administration of medications and difficulties in planning staff for maintenance of leisure time.[18]

In our research, despite the double shift being highlighted by a small portion of nurses as the cause for their depressive state, 52.2% of the participant nurses working in double shifts, having more than 60 hours per week. There were strong influence of this factor in the development of symptoms, although participants could not relate to such aspects.

The data showed that 30.2% of nurses reported work overload, low salary, excessive workload, exhaustion, concern with the work as responsible for the development of their depression.

These questions about excessive workload and double shifts are linked to as the job market has performed, with high demand of professionals for few jobs, which leads to unemployment and employment saturation, which in turn leads to devaluation of the profession.

Study showed that the demands of work, effort expended by the professionals and the overload in commitments were associated with high levels of anxiety and depression in nurses.[19]

It is observed that 11.3% of the participants related their current emotional state with devaluation and lack of recognition, being these items considered important factors for the presence of depressive symptoms among them.

The significant majority of participants did not see themselves as sick, a fact confirmed by the results of the assessment tool filled out by the nurse participants, in which only five had depressive symptoms, but in the observation instruments (HAM and MADRS), 21 (91.30%) presented results for depressive symptomatology. In the BDI, the participant can omit or lie, not knowing or thinking she/he has depression, being

ashamed to admit how she/he really feels about what is asked by the instrument, while in the other scales the evaluation is from the observer.

In addition to the overload of work are factors that can promote depressive symptomatology as the technical limitation of the nurses, the cognitive inability to solve problems and conflicts,[20] poor leadership skills and prejudice suffered at work.[21]

After the detection of depressive symptomatology, participants were told about the disease and received referrals to psychiatric or psychological evaluation according to their need.

It is possible to observe in our research that the working conditions mentioned were inadequate and relevant to the emergence of the depression in nurses.

The results of this study pointed to more than 90% of emergency professionals having depression, highly significant number compared to other studies. Such data deserve reflections and interventions for the purpose of enabling improvement of working conditions and consequent improvement in the mental health of these professionals.

# Conclusion

The majority of nurses working in emergency services showed depression, which is well above the expected results. The intervening factors for depressive symptoms related to work were, notably working conditions, excessive workload, unsatisfactory salary and professional devaluation. Most nurses did not realize their own physic distress, they did not related it to working conditions and believed there was no influence of this suffering on assistance.

## Collaborations

Oliveira FP; Mazzaia MC and Marcolan JF declare that contributed with the project design, analysis and interpretation of data, drafting the manuscript, critical reviewing relevant intellectual content and final approval of the version to be published.

# References

1. Bromet E, Andrade LH, Hwang I, Sampson NA, Alonso J, Girolamo G. et al. Cross-national epidemiology of DSM-IV major depressive episode. BMC Med. 2011;9(90).

2. World Health Organization (WHO). Health for the world's adolescents: a second chance on the second decade. Geneva: WHO;2014.

3. Substance Abuse and Mental Health Services Administration. Results from the 2012 National Survey on Drug Use and Health: Mental Health Findings, NSDUH Series H-47, HHS Publication No. (SMA) 13-4805. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2013. [cited 2014 Aug 14]. Available from: http://www.samhsa.gov/data/NSDUH/2k12MH_FindingsandDetTables/2K12MHF/NSDUHmhfr2012.htm#sec2-1.

4. Andrade LH, Wang YP, Andreoni S, Silveira CM, Alexandrino-Silva C, Siu ER, Nishimura R, Anthony JC, Gattaz WF, Kessler RC, Viana MC. Mental disorders in megacities: findings from the São Paulo megacity mental health survey, Brazil. PLoS One. 2012; 7(2):e31879.

5. Joyce T, McMillan M, Hazelton M. The workplace and nurses with a mental ilness. Int J Mental Health Nurs. 2009; 18(6):391-7.

6. Pisanti R, Doef M van der, Maes S, Lazzari D, Bertini M. Job characteristics, organizational conditions, and dustress/well being among italian and dutch nurses: a cross-national comparison. Int J Nurs Stud. 2011; 48(7):829-37.

7. Dalri RCMB, MLCC Robazzi, Silva LA. Riscos ocupacionais e alterações de saúde entre trabalhadores de enfermagem brasileiros de unidades de urgência e emergência. Cienc Enferm. 2010; 16(2):69-81.

8. Salehi A, Javanbakht M, Ezzatababdi MR. Stress and its determinants in a sample of Iranian nurses. Holist Nurs Pract. 2014; 28(5):323:8.

9. Seligmann-Silva E, Bernardo MH, Maeno M, Kato M. O mundo contemporâneo do trabalho e a saúde mental do trabalhador. Rev Bras Saúde Ocup. 2010; 35(122):187-91.

10. Bromet E, Andrade LH, Hwang I, Sampson NA, Alonso J, Dirolamo G, et al. Cross-national epidemiology of DSM-IV major depressive episode. BMC Med. 2011;9:90.

11. von Treuer K, Fuller-Tyszkiewicz M, Little G. The impact of shift work and organizational work climate on health outcomes in nurses. J Occup Health Psychol. 2014; 19(4):453-61.

12. Auerbach DI, Buerhaus PI, Staiger DO. Registered nurse supply grows faster than projected amid surge in new entrants ages 23-26. Health Aff. 2011; 30(12):2286-92.

13. Adriaenssens J, de Gucht V, Maes S. The impact of traumatic events on emergency room nurses: finding from a questionnaire survey. Int J Nurs Stud. 2012; 49(11):1411-22.

14. Rosa AJ, Bonfanti AL, Carvalho CS. O sofrimento psíquico de agentes comunitários de saúde e suas relações com o trabalho. Saúde Soc. 2012; 21(1):141-52.

15. Adkins CV, Trivedy C, Stanhope B. What is the role of advanced nurse practioners (ANPs) in a major trauma team (MTT)? Emerg Med J. 2014; 31(9):783.

16. Robazzi MLCC, Mauro MYC, Dalri RCMB, Silva LA, Secco IAO, Pedrão LJ. Exceso de trabajo y agravios mentales a lós trabajadores de la salud. Rev Cuba Enferm. 2014; 26(1):52-64.

17. Bogossian F, Winters-Chang P, Tuckett A. "The pure hard slog that nursing is...": a qualitative analysis of nursing work. J Nurs Scholarsh. 2014; 46(5):377-88.

18. Pires D, Lopes MGD, Silva MCN, Lorenzetti J, Peruzzo SA, Bresciani HR. Jornada de 30 horas semanais: condição necessária para assistência de enfermagem segura e de qualidade. Enferm Foco (Brasília).2010; 1(3):114-8.

19. Mark G, Smith AP. Occupational stress, job characteristics, coping, and the mental health of nurses. Br J Health Psychol. 2012, 17(3):505-21.

20. Wu H, Ge CX, Sun W, Wang JN, Wang L. Depressive symptoms and occupational stress among Chinese female nurses: the mediating effects of social support and rational coping. Res Nurs Health. 2011; 34(5):401-7.

21. Atefi N, Abdullah KL, Wong LP, Mazlom R. Factors influencing registered nurses perception of their overall job satisfaction: a qualitative study. Int Nurs Rev. 2014; 61(3):352-60.